

ABSTRACT

In one embodiment, a longitudinal camera array is rotated through a capture cylinder, with each camera in the array capturing multiple images as the array rotates. These images can be looking outward along the radials of the cylinder, or alternatively
5 looking tangential to the cylinder. The longitudinal camera array allows the surrounding scene to be captured from multiple different planes that are substantially parallel to the ends of the capture cylinder, allowing for more accurate subsequent rendering of the scene. A view of the scene can be subsequently rendered by determining a location and direction of view of an observer, and then selecting one or more of the multiple lateral
10 and longitudinally adjacent capture images, as well as one or more pixels within that capture image(s), to use to determine a display value for the pixel.